

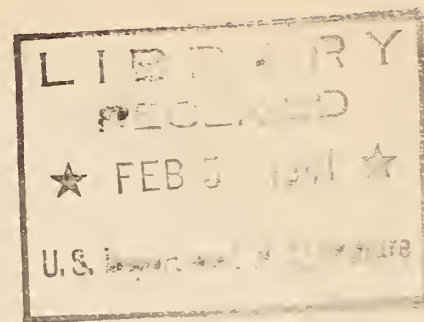
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UNITED STATES DEPARTMENT OF AGRICULTURE  
U.S. Agricultural Marketing Service



RETAIL TRADE PRACTICES AND PREFERENCES FOR EARLY-CROP  
POTATOES IN CHICAGO, AND QUALITY ANALYSES OF POTATOES  
OFFERED FOR SALE TO CONSUMERS, 1940

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Washington, D. C.  
December 1940

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# RETAIL TRADE PRACTICES AND PREFERENCES FOR EARLY-CROP POTATOES IN CHICAGO, AND QUALITY ANALYSES OF POTATOES OFFERED FOR SALE TO CONSUMERS, 1940 1/

By Raymond L. Spangler, Agricultural Economist, and W. W. Morrison,  
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## INTRODUCTION

Distribution of early-crop potatoes presents a multiplicity of problems just as does the distribution of the late crop. Whereas the latter is subjected to a large amount of handling into and out of storage and must be protected against freezing temperatures, the early crop, although usually harvested, graded, and packed for immediate shipment must be protected against high temperatures when conditions are conducive to the development of decay organisms. Thus, it is often difficult to place good quality potatoes, whether early or late, in the hands of the ultimate consumer.

This discussion deals largely with consumer ideas as reflected by statements from 505 retail store managers in Chicago regarding varieties, quality, and size of early- or new-crop potatoes handled by them during the spring and early summer months of 1940. Also, information relative to certain trade practices is given as well as the results of analyses of the quality of lots of early-crop potatoes offered for sale in the retail stores. 2/

## PLAN OF PROCEDURE

Two regularly employed Federal fruit and vegetable inspectors were detailed to interview retailers and to analyze lots of new potatoes offered for sale in retail stores.

Store managers were asked their opinions relative to certain trade practices, preferences, and objections to various qualities in the new-crop potatoes that they handle. Analyses of potatoes were started in January, when the first receipts from Florida were available, and continued to July 1. Questions, however, were confined until about April 30 to late potatoes of the previous season's crop after which they were directed exclusively to preferences, objections, and trade practices involving new-crop potatoes.

Since funds were not available for continuation of the study after July 1 it was not possible to obtain information on potatoes from all early-producing States that ship to the Chicago market, and retailers' opinions, no doubt, were based largely on shipments that came to market prior to that time. Analyses of potatoes in the

1/ This study is a continuation of a similar study conducted in Chicago and suburban areas covering late-crop potatoes of the 1939-40 crop, the results of which are reported in a publication issued by the Agricultural Marketing Service entitled "Retail Trade Practices and Preferences for Late-Crop Potatoes in Chicago and Suburbs, and Quality Analyses of Potatoes Offered for Sale to Consumers, 1939-40." The studies were made possible as a result of a congressional appropriation made specifically for gathering data and obtaining information relative to possibilities of making the United States standards for fresh fruits and vegetables more adaptable to consumer use.

2/ W. W. Morrison, one of the authors, and Harry M. Branch, Assistant Marketing Specialist, interviewed the retail store managers in connection with the study and made the analyses of potatoes in the retail stores.

stores also were necessarily confined to potatoes that arrived in Chicago prior to July 1 from important shipping States, principally Florida, south Texas, Alabama, Louisiana, and California.

The study was planned to be as representative as possible of average conditions. Although it was estimated from various sources that the chain stores handled about 30 percent of the volume of late-crop potatoes distributed in the Chicago area, it is believed that they distributed a larger percentage of new potatoes since it was observed that during the early part of the shipping season very few independent retailers stocked new potatoes in their stores. During the 2 months a total of 505 store managers were interviewed who included 264 or 52 percent independent managers, 200 or 40 percent corporate chain store managers, and 41 or 8 percent voluntary chain store managers.

A newspaper's classification of the city into various rental areas was used as a guide in selecting a representative number of stores in various income areas. This classification was published in 1930 but since that time it has been estimated that rental values have decreased about 35 percent. The following classification shows the approximate average monthly rental value of rented homes combined with owned homes for each area in 1930 and the 1940 adjusted values:

<u>1930 Approximate Value</u>	<u>Adjusted 1940 Approximate Value</u>
Rental area -	Rental area -
A - Over \$75	A - Over \$50
B - \$55 to \$75	B - \$38 to \$50
C - \$45 to \$55	C - \$29 to \$38
D - \$35 to \$45	D - \$23 to \$29
E - Under \$35	E - Under \$23

There is overlapping within districts, of course, but for the purpose of this study the above figures in themselves are not important. In the classification of a store as belonging to one of these various rental areas, the enumerators used their best judgment after sizing up the class of merchandise carried, type of neighborhood, class of customers, and other factors. Thus, for the purposes of this study, stores rated as being located in the various rental areas were classified as follows:

- A - Stores serving highest income customers
- B - Stores serving above average income customers
- C - Stores serving average income customers
- D - Stores serving below average income customers
- D - Stores serving lowest income customers

The number of stores visited were classified as belonging to the various income groups or rental areas as follows:

- A - 44 stores
- B - 110 stores
- C - 169 stores
- D - 114 stores
- E - 68 stores



Aside from gathering data relative to the possibilities of making the United States standards for potatoes more adaptable to consumer use the principal aim of the study was to disclose information suggesting possible improvements in the quality of potatoes offered for sale to consumers as well as general improvement in potato marketing methods.

It is believed that the study was made under as representative conditions as possible and that opinions given by the retailers represent a fair cross section of the opinions of all retail store managers in Chicago. It is also believed that the results of analyses of lots of potatoes in the stores are representative of the quality offered for sale in all stores from winter to early summer.

Adverse criticisms and objections to certain qualities in potatoes from particular producing States are reported only in the hope that they may prove beneficial to the potato industry in helping to bring about improvement and not to reflect on the quality of potatoes from any State.

## RETAIL TRADE PRACTICES

### Methods of Obtaining Supplies

Buyers for the corporate chain stores purchase most of their new-crop potatoes in carload lots directly from shippers at shipping points or through subsidiary or other corporations that deal directly with shippers. The store manager thus is in position to exercise but a small amount of control over the quality and type of potatoes that he offers for sale to consumers. His chief concern is to keep on hand an adequate supply of the types in demand which he orders from a central warehouse.

A large majority of the voluntary chain stores buy independently the same as independent retailers and of course are able to control the quality of supplies they handle. Most of them obtain their supplies through carlot receivers although some purchase from trucking jobbers and peddlers who bring the potatoes to the stores.

A total of 305 independent and voluntary chain store managers were questioned as to their methods of getting supplies. Of the 293 who replied about 53 percent stated that they ordered their stock by telephone from wholesale dealers or jobbers in whom they placed confidence. About 22 percent said they or one of their representatives personally inspected the potatoes before purchasing, usually at one of the larger wholesale markets - South Water, Randolph Street, or South State Street. Sixteen percent said that they sometimes inspected the potatoes before purchasing and the rest of the time relied on the wholesaler to furnish satisfactory supplies. The remaining retailers, about 9 percent, replied that they depended on trucking jobbers or peddlers to furnish acceptable potatoes.

The majority of the retailers stated that they ordered their potatoes on the basis of U. S. No. 1 grade, or the best available.

## Checking Weights Upon Receipt of Potatoes

Only about 10 percent of the voluntary chain and independent retailers stated that they make it a general practice to check billing weights of the potatoes delivered to them; 5 percent said that they occasionally check them; and 85 percent stated that they do not make a practice of weighing the container of potatoes upon receipt at their stores.

Thirty retailers volunteered information concerning their check weights. Of these about 43 percent said that they usually find their purchases to contain full weight or more; 30 percent stated that they generally find containers to be 1 to 2 percent underweight, while the remainder said their receipts are from 3 to 5 percent underweight.

Records of billing weights to chain stores were examined in practically all stores visited. Billed weights for 50-pound containers were found to range from 46 to 50 pounds, with 48-, 49-, and 50-pounds predominating. Billing weights of most of the chain organizations on 100-pound sacks ranged from 94 to 100 pounds, with most of the packages being billed at 98 pounds. One chain organization made it a general practice to bill the containers on the basis of the average computed weight per container in the carload. Occasionally the billing weight was slightly more than 100 pounds.

## Volume Handled by Various Classes of Retailers

As was true of late-crop potatoes, the average chain store in Chicago handled more early potatoes than the average independent or voluntary chain store. As shown in table 1, 53 percent of the independent and voluntary chain stores handled only from 1 to 5 sacks of 100-pounds per week, whereas only 17 percent of the chain stores handled such a small volume. On the other hand, 46 percent of the chain stores sold from 6 to 10 sacks per week as compared with only 28 percent for the other two groups. Also, 21 percent of the chain-store managers reported a volume turnover varying from 11 to 15 sacks per week as compared with only 8 percent for the independent and voluntary chain-store managers who handled this volume. Summarizing in another manner, 81 percent of the voluntary chain and independent store managers reported a sales volume of from 1 to 10 sacks per week, whereas 84 percent of the corporate chain store managers reported sales of from 1 to 15 sacks per week.

Only 5 retailers (1 independent and 4 chain store) reported a volume of distribution more than from 50 to 100 sacks of early potatoes per week.

Considering all retailers, about 39 percent distributed 5 sacks or less per week, 35 percent distributed from 6 to 10 sacks per week, 13 percent from 11 to 15 sacks per week, and the remainder from 16 to 100 sacks per week.

In contrast with the considerable volume of late-crop potatoes distributed in so-called consumer packages packed by shippers and receivers, only a few retailers out of the 505 interviewed were found to be carrying such packages of new-crop potatoes. In the few stores that handled them the potatoes had been packed by a Chicago distributor.



Table 1. - Volume of early-crop potatoes handled per week as reported by 505 retailers in Chicago, April to June 1940

Number of cwt. per week	As reported by -					
	Independent and				Total	
	voluntary		Chain-store managers:			
	chain-store managers:					
	Number	Percent	Number	Percent	Number	Percent
Less than 1	2	0.7	---	----	2	0.4
1 to 5	161	52.8	34	17.0	195	38.6
6 to 10	86	28.2	92	46.0	178	35.2
11 to 15	25	8.2	42	21.0	67	13.2
16 to 20	6	2.0	7	3.5	13	2.6
21 to 25	8	2.6	8	4.0	16	3.2
26 to 30	6	2.0	6	3.0	12	2.4
31 to 40	4	1.3	3	1.5	7	1.4
41 to 50	5	1.6	4	2.0	9	1.8
51 to 60	1	.3	1	.5	2	.4
80 to 100	---	----	3	1.5	3	.6
No reply	1	.3	---	----	1	.2
Total	305	100.0	200	100.0	505	100.0

#### Methods of Serving Customers

The principal method of serving customers with new potatoes as reported by retailers in Chicago consisted of preparing the purchase in the presence of the customer. As shown in table 2, this method was most common in about 90 percent of the stores of all classes, and there was no material difference in this practice between chain stores and independent and voluntary chain stores.

The practice of allowing customers to serve themselves predominated in only about 7 percent of the stores and the practice of preparing packages before customers entered was given as the most common method in approximately 3 percent of the stores. Here again there was no appreciable difference in the practices between different types of stores.

From the standpoint of practices in stores catering to various income groups it is significant that the policy of serving customers in independent and voluntary chain stores with packages of potatoes prepared before customer's entry is predominant only in stores catering to high-income groups. In fact, no independent or voluntary chain stores located in rental areas C to E reported this as the prevailing method. No doubt the reason for this practice is that many of these stores that cater to customers of high income, carry on a charge and delivery business with most of their customers through telephone orders and they naturally select the quality and size desired for discriminating customers in order to retain their patronage.

Table 2. - Predominating methods of serving customers early-crop potatoes as reported by 505 retailers in Chicago, April to June 1940

	Packages prepared by clerk in customer's presence			Customers serve themselves			Packages prepared in store before		
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	No.:Pct.
Rental area	95	75 to 50 to	Predomi-	75	50 to	Predomi-	customer's entry	customer's entry	Total
and class	percent:	94	74	nates but:	percent:	74	nates but:	predominates but	
	or more:	percent:	percent:	no per-	or more:	percent:	no per-	no percentage	
	:	:	:	centage :	:	:	centage :	given	
	:	:	:	given :	:	:	given :		
Independent	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	No.:Pct.	
and voluntary	:	:	:	:	:	:	:	:	
chain stores	:	:	:	:	:	:	:	:	
A	36.7	13.3	16.7	---	3.3	---	30.0	30:100.0	
B	65.5	16.4	7.3	5.4	1.8	1.8	1.8	55:100.0	
C	55.4	20.5	1.2	14.5	3.6	2.4	---	83:100.0	
D	55.7	15.2	5.1	15.2	2.5	---	---	79:100.0	
E	60.4	19.0	3.4	8.6	3.4	5.2	---	58:100.0	
Total	56.4	17.4	5.2	10.5	2.3	2.0	3.3	305:100.0	
Chain stores	:	:	:	:	:	:	:	:	
A	14.4	35.7	7.1	35.7	---	7.1	---	14:100.0	
B	54.6	20.0	10.9	5.5	3.6	1.8	1.8	55:100.0	
C	54.6	23.3	7.0	7.0	3.5	2.3	2.3	86:100.0	
D	62.9	14.3	2.8	5.7	5.7	---	8.6	35:100.0	
E	80.0	20.0	---	---	---	---	---	10:100.0	
Total	54.5	21.5	7.0	8.0	.5	2.0	3.0	200:100.0	
Total all areas	55.6	19.0	5.9	9.5	1.6	2.0	3.2	505:100.0	

Table 3. - Predominating size of purchase of early-crop potatoes as reported by 505 retailers in Chicago, April to June 1940

Rental area and class:		Number of pounds most frequently purchased									
		2 or 3:2½ or 5:	5	5: 5	5, 6, or 5 or 10:	7½	10	10 or 15:	No	: reply:	Total
		Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	No.	Pct.	
Independent and											
voluntary chain											
stores											
A		10.0	40.0	33.4	10.0	---	3.3	---	30	3.3	100.0
B		5.5	29.1	34.5	18.2	7.3	3.6	---	55	---	100.0
C		6.0	16.9	39.8	19.3	8.4	---	2.4	83	6.0	100.0
D		16.4	34.2	19.0	5.1	2.5	---	---	79	1.3	100.0
E		10.3	10.3	3.5	---	---	---	---	58	---	100.0
Total		20.7	9.8	24.6	10.8	4.3	1.0	.6	305	2.3	100.0
Chain stores											
A		7.1	---	14.3	21.5	---	7.1	---	14	---	100.0
B		5.5	14.5	5.5	10.9	---	---	---	55	---	100.0
C		1.2	5.8	9.3	39.5	---	5.8	1.2	86	1.2	100.0
D		---	5.7	2.9	51.4	---	5.7	2.9	35	---	100.0
E		10.0	20.0	10.0	20.0	---	10.0	---	10	---	100.0
Total		3.0	8.5	7.5	31.5	---	4.5	1.0	200	.5	100.0
Total all areas		13.6	9.3	32.1	18.6	2.6	2.4	.8	505	1.6	100.0



### Range and Predominating Size of Retail Purchase

Consumers purchase new-crop potatoes in comparatively small quantities as is evidenced by retailers' replies showing the predominating unit of purchase in their stores (table 3). It was not possible to classify the most prevalent sales units in the various classes of stores according to rental areas because many store managers reported 2 or 3 common units of purchase. The replies indicated, however, that the most common size of purchase in more than three-fourths of the stores was not more than  $7\frac{1}{2}$  pounds. Store managers reported that there was very few sales in units of over 15 pounds.

There was some variation in the predominating unit of purchase between chain stores and independent and voluntary chain stores. For example, about 21 percent of the independent and voluntary chain-store managers reported that most of their sales were made in quantities of 2 or 3 pounds, whereas only 3 percent of the chain-store managers reported these sizes as the predominating sales units. In general, the replies of independent and voluntary chain-store managers show that the average unit of sale is slightly smaller than in corporate chain stores.

Most of the independent and voluntary chain-store managers who reported 2- or 3-pound sales as most common, were located in the lower rental areas, which indicates that consumers with low incomes buy the relatively high-priced new potatoes sparingly.

### Practice of Discounting Potato Prices

To gain some idea of the practice of discounting the price of potatoes of undesirable size or of defective potatoes that accumulate in bins, the retailers were asked if they found it necessary to sell any new-crop potatoes at a discount and if so to give an estimate of the percentage of their total receipts that they discounted. Of 496 store managers who replied to this question, about 81 percent stated that they do not sell any of their new-crop potato receipts at a discount. Many of these, however, said that they cannot sell badly defective stock or stock of undesirable size but that the amount of such stock is so small they give it away, discard it with the garbage, or in some instances use it in their own homes. Only about 9 percent stated that they make a practice of discounting undesirable-sized and off-quality stock of all varieties. About half of these estimated the amount to be from 1 to 2 percent, and the remainder from 3 to 10 percent. An additional 1 percent reported that they discount some off-quality Bliss Triumphs, while 9 percent specified White Rose as the only variety they discount. When discounts are made on lots of White Rose potatoes it is generally because they are affected with lightburn. Estimates of the amount of total receipts of this variety discounted ranged from 1 to more than 15 percent, while about two-thirds of the retailers placed the estimate at between 3 and 10 percent.

### Retailers' Losses Due to Decay and Other Serious Defects

In handling from shipping points to retail stores, some potatoes deteriorate to such an extent as to be unfit for sale. Retailers were asked to give an estimate of the percentage of loss from such deterioration based on their total receipts. A summary of the answers is shown in table 4.

Table 4. - Estimated percentage of loss in early-crop potato receipts, from decay or other serious defects, as reported by 505 retailers, Chicago, April to June 1940

Percent loss	As reported by -							
	Independent		Chain-store		Voluntary chain-		Total	
	retailers		managers		store managers			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
None	11	4.2	6	3.0	2	4.9	19	3.7
Less than 1	78	29.5	74	37.0	17	41.5	169	33.5
1 to 2	127	48.1	94	47.0	17	41.5	238	47.1
Over 2 to 3	16	6.1	19	9.5	2	4.9	37	7.3
Over 3 to 4	10	3.8	5	2.5	2	4.9	17	3.4
Over 4 to 5	11	4.2	1	.5	---	---	12	2.4
Over 5 to 6	3	1.1	---	---	---	---	3	.6
Over 6 to 7	1	.4	---	---	---	---	1	.2
Over 7 to 10	3	1.1	---	---	---	---	3	.6
No reply	4	1.5	1	.5	1	2.3	6	1.2
Total	264	100.0	200	100.0	41	100.0	505	100.0

About 84 percent of the retailers, including 4 percent who reported no losses, estimated their losses from potatoes that had to be thrown away, at not more than 2 percent. An additional 11 percent estimated their losses at from 2 to 4 percent.

Several independent retailers estimated their losses at from 4 to 10 percent. They no doubt included in their estimates the percentage of potatoes that deteriorated in the stores between the time of receiving and the time of sale. A number reported that they were forced to throw away relatively large amounts of White Rose potatoes that became badly affected with lightburn from exposure to light in the stores.

#### RETAILERS' PREFERENCES, OBJECTIONS, AND SUGGESTIONS

##### Varietal Preferences

For new potatoes retailers showed a decided preference for the red-skinned Bliss Triumph variety. Very few designated them by the correct varietal name but indicated preference for "Reds." Bliss Triumph was the only red-skinned early-crop variety on the market at the time.

As is shown in table 5, 94 percent of the 505 retailers interviewed named Bliss Triumphs as their first choice, whereas only 4 percent expressed preference for White Rose and about 2 percent for Cobblers. California White Rose was named as second choice by the majority of retailers. Cobblers were rated as third choice but they were not available for comparison in most stores during the period of the study.

There was very little variation among the several classes of retailers in preferences for varieties. It is significant, however, that the majority of retailers who specified Cobblers as their first choice were located in the areas catering to lower-income groups as is shown in tables 22 and 23. All of the independent and voluntary chain-store managers who selected this variety as first choice, were located in rental area E. The principal reason given for such a choice was that Cobblers



Table 5. - Varietal preference for early-crop potatoes as expressed by 505 retailers in Chicago, April to June 1940

Variety	Independent retailers			Chain-store managers		
	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	95.5	6.8	---	92.0	9.8	---
White Rose	1.5	<u>1/</u> 91.5	25.0	8.0	<u>2/</u> 90.1	14.3
Cobbler	3.0	1.7	75.0	---	1.1	85.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
	Voluntary chain-store managers			Total all retailers		
	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	97.6	4.2	100.0	94.2	7.6	8.3
White Rose	2.4	<u>3/</u> 91.6	---	4.2	90.8	16.7
Cobbler	---	4.2	---	1.6	1.6	75.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

1/ Although here noted as second choice 4 percent rated White Rose even with Bliss Triumph.

2/ Although here noted as second choice 7 percent rated White Rose even with Bliss Triumph.

3/ Although here noted as second choice 8 percent rated White Rose even with Bliss Triumph.

could be purchased and sold a little cheaper than either the Bliss Triumph or White Rose varieties.

As shown in table 23, only a few chain-store dealers mentioned Cobblers in their statement of varietal preferences and all of them placed this variety as second or third choice.

As was reported in the study of varietal preferences for late-crop potatoes, Chicago consumers show a decided preference for red-skinned potatoes and no doubt this is one of the principal reasons for the similar preference in new potatoes. They are also favored because of their reputation for excellent cooking quality. Undoubtedly many consumers who have formed the habit of using red potatoes do not give other varieties a trial.

The retailers were asked if they preferred to buy their early-crop potatoes from any particular State or locality and 67 percent stated that they preferred red potatoes but had no State preference. About 2 percent indicated no preference for either variety or State of origin. Sixteen percent expressed preference for both "Reds" and White Rose but specified no preferred State of origin. The remaining retailers favored new potatoes from one or more producing States including Texas, Florida, California, Louisiana, and Oregon, but these replies are not regarded as particularly significant because undoubtedly most of the store managers were influenced in their answers by the fact that the potatoes on hand of satisfactory quality and maturity were from one of these States.



New potatoes are of minor importance for baking because Russet Burbanks of the previous season's late crop are available on the market until early summer. An interesting observation made by managers, however, was that many consumers thought California White Rose potatoes were new-crop Idaho Russet Burbanks. It was further observed that many retailers did not attempt to correct customers' beliefs that White Rose potatoes were new-crop Idaho Russet Burbanks. In fact, it was noted that lots of White Rose in a few stores bore a placard with the name "New Idahos" or some similar misleading designation.

### Defects Considered Most Serious

Defects of early-crop potatoes are far less serious to the retail trade and consumers than defects of late-crop potatoes, most of which are held in storage. As shown in table 6, about half of all retailers interviewed stated that they did not regard any defects as serious in early-crop round varieties of potatoes while about 15 percent found no fault with the long White Rose from California (table 7).

Table 6. - Defects considered most serious in early-crop, round varieties <sup>1/</sup> of potatoes as reported by 505 retailers in Chicago, April to June 1940

Defects	As reported by -							
	Independent		Chain-store		Voluntary chain-		Total	
	retailers		managers		store managers			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Soft rot.....	73	27.7	89	44.5	9	21.9	171	33.9
Flabby, shriveled, or:								
discoloration.....	22	8.3	9	4.5	4	9.8	35	6.9
Mechanical injury.....	22	8.3	20	10.0	2	4.9	44	8.7
Dirty or moldy.....	---	---	2	1.0	---	---	2	.4
Misshapen.....	1	.4	1	.5	---	---	2	.4
Feathering.....	1	.4	---	---	---	---	1	.2
None serious.....	145	54.9	79	39.5	26	63.4	250	49.5
Total.....	264	100.0	200	100.0	41	100.0	505	100.0

<sup>1/</sup> The retailers' opinions were based principally on the Bliss Triumph variety.

Table 7. - Defects considered most serious in White Rose potatoes, as reported by 421 <sup>1/</sup>retailers in Chicago, April to June 1940

Defects	As reported by -							
	Independent		Chain-store		Voluntary chain-		Total	
	retailers		managers		store managers			
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Soft rot.....	5	2.6	5	2.5	1	3.2	11	2.6
Flabby or shriveling..	---	---	2	1.0	1	3.2	3	.7
Lightburn.....	150	79.0	164	82.0	22	71.0	336	79.8
Other discoloration...	4	2.1	6	3.0	---	---	10	2.4
None serious.....	31	16.3	23	11.5	7	22.6	61	14.5
Total	190	100.0	200	100.0	31	100.0	421	100.0

<sup>1/</sup> Out of 505 retailers interviewed 84 reported that they were not handling White Rose potatoes.

Soft rot was rated as the most serious defect of round varieties (opinions based primarily on the Bliss Triumph variety) by the retailers. Most of them reported, however, that this defect had not given them any serious trouble except in occasional lots. Most dealers reported that the average lot did not have more than 1 or 2 percent soft rot.

A small percentage of retailers complained that some lots of potatoes became flabby, shriveled, or showed discoloration over skinned areas before they could dispose of them. A few also rated mechanical injury as the most serious defect of early round varieties. Although this defect was rated by far as the most serious in late-crop potatoes, it was only of minor importance in early-crop potatoes this season. Dirty potatoes, which were seriously criticised in late-crop receipts, were hardly mentioned as constituting a defect of early-crop stock owing to the fact that most of the stock was washed at shipping points.

As shown in table 7 the only really serious defect of California White Rose potatoes was lightburn and nearly 80 percent of the retailers who handled this variety rated it as the most serious defect. The complaint was most prevalent at the beginning of the shipping season when the potatoes were harvested before they were well matured. Retailers stated that when potatoes were exposed to light for only a short period of time they became green in color and often a considerable number had to be thrown away. Some idea as to how serious lightburn was regarded by retailers is given by the fact that 72 retailers said that they had either discontinued handling White Rose or were not handling them because of this tendency. One chain organization reported that it temporarily discontinued handling White Rose in all its retail units. Store managers found that as the shipping season advanced and the potatoes became well matured, they experienced less trouble in this respect, and many reported little or no difficulty.

Comparatively few retailers mentioned discoloration as a serious defect of the White Rose variety, probably because damage by lightburn gave them more trouble. Most complaints were registered, however, during the early part of the shipping season when it was observed that the appearance of many lots was seriously injured by dark-brown discoloration occurring on skinned areas of the immature tubers.

The experience of the Chicago retailers the past season indicates that California shippers might well consider withholding shipments of this variety until the potatoes are more advanced in maturity.

#### Size Preferences for Early-Crop Potatoes

Whereas the average consumer objects to small-sized late-crop potatoes, he is less likely to complain of small sizes in lots of new-crop potatoes. In fact, many consumers prefer the small-sized tubers for creaming and making potato salad.

The retailers were asked to give the range of size for both round and long varieties most desirable for their customers. Because retailers are not accustomed to specifying size of round varieties in terms of inches in diameter, and the size of long varieties in terms of ounces in weight, they were asked to select the desirable minimum and maximum size of each variety most in demand by their customers. The size range of round varieties selected by the store managers was then determined by measuring the diameter of each potato by means of size rings. The size range of the long variety selected was determined by weighing each potato and recording the weights in ounces. The results of these determinations are summarized in tables 8 and 9.



Table 8. - Size range of round varieties of early-crop potatoes 1/ most desirable, as reported by 505 retailers in Chicago, April to June 1940

Size range in inches	As reported by -								
	Independent		Chain-store		Voluntary chain-		Total		
	retailers		managers		store managers				
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
1½ to 2	23	8.7	5	2.5	1	2.4	29	5.7	
1-7/8 to 3	5	1.9	---	---	1	2.4	6	1.2	
2 to 2-3/4	1	0.4	5	2.5	1	2.4	7	1.4	
2 to 3	186	70.4	164	82.0	33	80.5	383	75.8	
2 to 3¼	15	5.7	10	5.0	2	4.9	27	5.4	
2 to 3½	4	1.5	3	1.5	---	---	7	1.4	
2¼ to 3	25	9.5	11	5.5	3	7.4	39	7.7	
2¼ to 3¼	5	1.9	---	---	---	---	5	1.0	
2½ to 3¼	---	---	2	1.0	---	---	2	0.4	
Total	264	100.0	200	100.0	41	100.0	505	100.0	

1/ Most opinions based on Bliss Triumph variety.

Table 9. - Size range of early-crop White Rose potatoes most desirable, as reported by 360 retailers 1/ in Chicago, April to June 1940

Size range in ounces	As reported by -								
	Independent		Chain-store		Voluntary chain-		Total		
	retailers		managers		store managers				
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
3 to 10	---	---	1	0.6	1	4.0	2	0.6	
3 to 12	2	1.2	1	.6	---	---	3	.8	
4 to 10	15	9.3	18	10.3	3	12.0	36	10.0	
4 to 12	60	37.3	74	42.5	10	40.0	144	40.0	
4 to 14	29	18.0	27	15.5	9	36.0	65	18.1	
4 to 16	17	10.6	12	6.9	---	---	29	8.0	
5 to 10	12	7.4	8	4.6	2	8.0	22	6.1	
5 to 12	14	8.7	22	12.6	---	---	36	10.0	
5 to 14	4	2.5	5	2.9	---	---	9	2.5	
6 to 10	4	2.5	1	.6	---	---	5	1.4	
6 to 12	3	1.9	3	1.7	---	---	6	1.7	
6 to 14	1	.6	2	1.2	---	---	3	.8	
Total	161	100.0	174	100.0	25	100.0	360	100.0	

1/ Out of 505 retailers interviewed, 137 were not handling White Rose potatoes and 8 did not reply to the question.

More than three-fourths of the store managers specified 2 to 3 inches as the most desirable size range for round varieties of new-crop potatoes. There seemed to be little difference in the size preferences of retailers by classes except that the percentage of independent retailers indicating the most desirable size as 1½ to 2 inches, or size B, according to size classification in the United States standards for potatoes, was higher than for the other two groups. As will be noted in table 24, most of these retailers were located in low-income areas. They stated that the choice of their customers was governed largely by the substantial price differential between the small- and medium-sized potatoes.



Many store managers located in the higher rental areas had many customers who preferred small-sized new potatoes for creaming and for making potato salad.

The majority of Chicago consumers prefer White Rose potatoes ranging from 4 ounces minimum to not over 14 ounces maximum. As shown in table 9, about 68 percent of the store managers specified potatoes within this range to be most desirable. Forty percent designated 4 to 12 ounces as the most desirable range of size. There was very little difference in preferable sizes specified between the various classes of retail stores.

The most desirable size range for the White Rose variety specified by retailers located in the various rental areas is shown in table 25. There seemed to be no significant differences in the choice of most desirable sizes of this variety between retailers catering to different income groups.

#### Preferences for Washed or Unwashed Stock

Retailers expressed a decided preference for washed new potatoes. As shown in table 10 about 88 percent of the 505 retailers interviewed expressed a preference for washed stock while the remainder favored reasonably clean but unwashed stock.

Table 10. - Preference expressed for washed or unwashed early-crop potatoes as reported by 505 retailers in Chicago, April to June 1940

Rental area and class of retailer	Prefer washed stock		Prefer reasonably clean but not washed stock		Total	
	Number	Percent	Number	Percent	Number	Percent
Independent and voluntary chain store managers						
A	29	96.7	1	3.3	30	100.0
B	49	89.1	6	10.9	55	100.0
C	69	83.1	14	16.9	83	100.0
D	69	87.3	10	12.7	79	100.0
E	42	72.4	16	27.6	58	100.0
Total	258	84.6	47	15.4	305	100.0
Chain store managers						
A	14	100.0	---	---	14	100.0
B	52	94.5	3	5.5	55	100.0
C	81	94.2	5	5.8	86	100.0
D	29	82.9	6	17.1	35	100.0
E	10	100.0	---	---	10	100.0
Total	186	93.0	14	7.0	200	100.0
Total all retailers:	444	87.9	61	12.1	505	100.0

About half of the independent and voluntary chain-store managers who expressed a preference for reasonably clean but unwashed stock, stated that such stock had better keeping quality, while most of the remaining dealers said that the cheaper price influenced their choice. A few reported that their customers accepted reasonably clean stock about as readily as that which is washed. Most of the chain-store managers who preferred unwashed potatoes felt that the keeping quality of such stock was a little better.

The number of chain-store managers who expressed preference for washed stock was higher than for the independent and voluntary chain-store managers. It also seems significant that the majority of the independent and voluntary chain-store managers who favored handling unwashed stock, were located in the lower-rental areas where price is given more consideration by consumers when purchasing potatoes than by those in the higher-rental areas.

#### Suggestions for Improving the Quality of New-Crop Potatoes Offered for Sale to Consumers

The majority of retailers were reasonably well satisfied with the quality and size of early-crop potatoes that they handled during the past season. Only 171 store managers out of the 505 interviewed had suggestions to offer for improvement. These suggestions are summarized in table 11. The most important one, directed to California shippers, was that they find a means of delivering more mature White Rose potatoes that would be less susceptible to lightburn and discoloration. As was previously shown, these were the principal defects of the White Rose variety and many retailers felt that first shipments of this variety in the future should be further advanced in maturity than they were the past season.

The next most important suggestion offered was that shippers should adopt the use of 50-pound size sacks for the shipment of new-crop potatoes, although some retailers limited this suggestion to apply only to shipments of the White Rose variety. Reason given for this preference were that the smaller size of container is easier to handle and there is less handling damage to the potatoes. Many also stated that this size of package makes it more convenient to order exact amounts needed and other stated that handling such a size enabled them to maintain fresher displays. A number of retailers, however, reported that they could not afford to pay higher prices per hundredweight for this type of package than they were paying for potatoes in 100-pound sacks.

Retailers who suggested 50-pound sacks for only the White Rose variety said that receiving and displaying this variety in small lots would enable them to reduce lightburn damage to a considerable extent.

More uniform sizing was suggested by a few retailers whose customers generally preferred medium-sized stock. Retailers occasionally found it difficult to dispose of lots containing excessive amounts of small- or extra large-size tubers.



Table 11. - Suggestions for improving the quality of early-crop potatoes offered for sale to consumers as reported by 171 retailers in Chicago, April to June 1940

Suggestions	As reported by -					
	Independent and		Chain-store		Total	
	voluntary chain-		managers			
	store managers					
	Number	Percent	Number	Percent	Number	Percent
Better maturity, deferred shipment, or other means to lessen lightburn or other discoloration on White Rose variety.....	59	62.1	29	38.2	88	51.5
Shipment of all varieties in 50-pound sacks.....	19	20.0	27	35.6	46	26.9
Shipment of White Rose variety in 50-pound sacks.....	1	1.1	9	11.8	10	5.8
More uniform sizing.....	6	6.3	4	5.3	10	5.8
Better maturity all varieties.....	3	3.1	1	1.3	4	2.3
Less packing damage in 50-pound crates.....	3	3.1	1	1.3	4	2.3
Retailer education on handling White Rose.....	1	1.1	2	2.6	3	1.8
Trial of consumer packages.....	1	1.1	1	1.3	2	1.2
Fewer small sizes in U. S. No. 1 grade.....	2	2.1	---	---	2	1.2
More careful handling.....	---	---	1	1.3	1	.6
More consistent quality.....	---	---	1	1.3	1	.6
Total.....	95	100.0	76	100.0	171	100.0

#### QUALITY OF EARLY-CROP POTATOES OFFERED FOR SALE TO CONSUMERS

In the previous discussion certain practices that retailers in Chicago have adopted in the distribution of early-crop potatoes, and their preferences based on consumer reaction for certain varieties or types, quality, size, etc., have been shown. In addition, certain qualities in new potatoes to which retailers object have been discussed.

In the discussion that follows, the results of quality and size analyses of lots of potatoes found in the stores will be given. Such analyses were made of potatoes in the stores at the time the store managers were interviewed. Analyses for the purpose of ascertaining the quality of new-crop potatoes offered to consumers were largely confined to potatoes in the original containers. However, a considerable number of samples from bins were also analyzed. In order to obtain as accurate results as possible the full contents of original packages were analyzed rather than



samples from the containers. In a few instances some potatoes had been removed from the packages examined but only those packages were included in which it was thought that the remaining contents were representative of the full container. In the case of bin analyses, 25-pound representative samples were taken.

The number and type of containers examined by varieties and States of origin are shown in table 12. All the Florida Bliss Triumphs were packed in 50-pound crates, while all of the Bliss Triumphs from south Texas were packed in 50-pound sacks. Most of the packages from other States consisted of 100-pound sacks. Of the 729 containers of potatoes analyzed, about 84 percent were marked with the grade designation "U. S. No. 1" or "No. 1"; the remainder were unmarked as to grade.

Table 12. - Number, variety, State of origin, and grade markings on original containers of early-crop potatoes analyzed at retail stores in Chicago, January to June 1940

Variety	State of origin	Potatoes packed in -			Packages marked		Packages unmarked		Total
		50-pound	50-pound	100-pound	No. 1 or	as to			
		crates	sacks	sacks	U. S.	grade			
					No. 1	1/			
		Number	Number	Number	Number	Number	Number	Number	
Bliss Triumph	Florida	48	---	---	43	5			48
"	Texas (South)	---	105	---	92	13			105
"	Alabama	---	3	170	168	5			173
"	Louisiana	---	5	102	76	31			107
"	California	---	16	38	21	33			54
"	Mississippi	---	---	6	3	3			6
"	Oklahoma	---	---	2	---	2			2
"	Texas (North)	---	---	3	2	1			3
"	Arkansas	---	---	1	---	1			1
White Rose	California	---	16	189	192	13			205
Cobbler	South Carolina	---	---	7	---	7			7
"	North Carolina	---	---	12	9	3			12
"	Alabama	---	---	2	2	---			2
"	Virginia	---	---	2	2	---			2
"	Tennessee	---	---	1	1	---			1
"	Missouri	---	---	1	---	1			1
Total		48	145	536	611	118			729

1/ All packages were marked "U. S. No. 1" except 26 from Alabama, 2 from Texas, and 1 from Mississippi which were marked "No. 1."

In addition to examining potatoes in original containers a total of 361 samples from display bins were examined which included 154 samples of Bliss Triumphs, 199 samples of California White Rose, and 8 samples of Cobblers. Samples of the Bliss Triumph variety included 5 from Florida, 42 from Texas, 38 from Alabama, 21 from Louisiana, 5 from California, 1 from Mississippi, and 42 in which the State of origin could not be identified. Seven of the Cobbler samples came from North Carolina, and 1 originated in Alabama. More samples of California White Rose than for the other varieties were taken because of retailers' complaints of lightburn on this variety and analyses of samples from bins gave an opportunity to ascertain the seriousness of this defect.

Most of the analyses of potatoes in original containers represented different lots of potatoes. In some cases, however, there was probably some duplication as it is possible that some containers from the same carlot were delivered to different stores which were visited on the same day. No doubt many bin analyses include an analyses of potatoes from several different lots as it is common practice to add to the bin supply from different lots without maintaining the identity of each.

It is believed that the analyses of new-crop potatoes in original packages are fairly representative of the quality and size offered to consumers during the period.

All analyses were made on the basis of the requirements of United States standards for potatoes, which are widely used as a basis for contract in wholesale trading but only to a small extent in retail trading. Potatoes in each container or sample were scored if they were damaged by external defects to such an extent that they would not meet the requirements of U. S. No. 1 grade. This means that each individual potato in order to meet the requirements of U. S. No. 1 grade could not have an injury which would cause a loss of more than 5 percent of its total weight in order to remove the injury, or its appearance could not be materially injured. It was not feasible to score the potatoes for internal defects, which are usually of minor importance in early potatoes.

#### Quality in Original Containers

Most of the early-crop shippers pack their potatoes to meet requirements of U. S. No. 1. As shown in table 12, 611 out of 729 packages, or approximately 84 percent, were marked "U. S. No. 1" or "No. 1." No doubt most of the remaining 16 percent were packed to meet U. S. No. 1 requirements or a high percentage of U. S. No. 1 quality.

The quality of the various varieties by States of origin as found in original containers is shown in table 13. About 75 percent of the packages of all varieties arrived at the retail stores with potatoes meeting requirements of U. S. No. 1 grade as far as external defects were concerned. An additional 3 percent were out of grade because of the development of soft rot and about 14 percent contained potatoes that were 88 to 93 percent U. S. No. 1 quality. The fact that 84 percent of the packages were marked with the No. 1 grade designation and only 75 percent actually graded U. S. No. 1 does not necessarily mean that 9 percent of the packages were misbranded, as no doubt decay and other deterioration factors that developed after the potatoes were shipped were responsible for the failure of most of these potatoes to meet grade requirements at the time of delivery to the retail stores.

There was considerable variation in the quality of the Bliss Triumph variety from various States of origin. The quality of Texas Bliss Triumphs exceeded that from any of the other States; in fact, 80 percent reaching the stores met the requirements of U. S. No. 1. The quality of Louisiana Triumphs was poorest largely as a result of a defect not common to other producing sections. This defect, with cause unknown, is unnamed but is characterized by holes lined with epidermis and often penetrating to considerable depth into the tubers.

The average quality of California White Rose was found to be about the same as Texas Triumphs. The quality of 25 packages of Cobblers exceeded that of all varieties, with 92 percent actually grading U. S. No. 1 in the stores. Not many Cobblers were available for analysis, however, and it is possible that the average would not have been so high if more packages had been available for analysis.



Table 13. - Quality of early-crop potatoes inspected in original containers <sup>1/</sup>at various classes of retail stores in Chicago, January to June 1940

		: U. S. :88 to 93:		82 to 87:		75 to 81:		Under :			
Variety, State of		: U. S. :No. 1 :		percent:		percent:		percent:		75 :	
origin, and		: No. 1 :		except :		U. S. :		U. S. :		U. S. :	
class of store		:		for soft:		No. 1 :		No. 1 :		No. 1 :	
		:		rot :						U. S. :	
		:								No. 1 :	
Florida Bliss Triumph:		Percent:	Percent:	Percent:	Percent:	Percent:	Percent:	Percent:	Number :	Percent	
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		65.4 :	---	27.0 :	3.8 :	3.8 :	---	26 :	100.0		
Chain.....		63.6 :	---	9.1 :	9.1 :	9.1 :	9.1 :	22 :	100.0		
Total.....		64.6 :	---	18.8 :	6.2 :	6.2 :	4.2 :	48 :	100.0		
So. Texas Bliss Triumph:		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		85.7 :	4.8 :	7.9 :	---	---	1.6 :	63 :	100.0		
Chain.....		71.4 :	2.4 :	19.1 :	7.1 :	---	---	42 :	100.0		
Total.....		80.0 :	3.8 :	12.4 :	2.8 :	---	1.0 :	105 :	100.0		
Alabama Bliss Triumph:		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		76.7 :	5.5 :	15.1 :	2.7 :	---	---	73 :	100.0		
Chain.....		75.0 :	2.0 :	14.0 :	4.0 :	4.0 :	1.0 :	100 :	100.0		
Total.....		75.7 :	3.5 :	14.4 :	3.5 :	2.3 :	.6 :	173 :	100.0		
Louisiana Bliss Triumph:		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		81.5 :	---	14.8 :	---	3.7 :	---	27 :	100.0		
Chain.....		55.0 :	1.2 :	20.0 :	6.3 :	12.5 :	5.0 :	80 :	100.0		
Total.....		61.7 :	.9 :	18.7 :	4.7 :	10.3 :	3.7 :	107 :	100.0		
California Bliss Triumph:		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		74.2 :	---	16.1 :	3.2 :	6.5 :	---	31 :	100.0		
Chain.....		65.3 :	4.3 :	21.8 :	---	4.3 :	4.3 :	23 :	100.0		
Total.....		70.4 :	1.8 :	18.6 :	1.8 :	5.6 :	1.8 :	54 :	100.0		
Other Bliss Triumph <sup>2/</sup> :		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		57.1 :	---	42.9 :	---	---	---	7 :	100.0		
Chain.....		100.0 :	---	---	---	---	---	5 :	100.0		
Total.....		75.0 :	---	25.0 :	---	---	---	12 :	100.0		
California White Rose:		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		73.0 :	6.6 :	10.7 :	2.7 :	1.3 :	2.7 :	75 :	100.0		
Chain.....		81.5 :	3.1 :	8.4 :	3.1 :	.8 :	3.1 :	130 :	100.0		
Total.....		79.5 :	4.4 :	9.3 :	2.9 :	1.0 :	2.9 :	205 :	100.0		
Cobbler <sup>3/</sup> :		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		90.9 :	---	9.1 :	---	---	---	11 :	100.0		
Chain.....		92.9 :	---	7.1 :	---	---	---	14 :	100.0		
Total.....		92.0 :	---	8.0 :	---	---	---	25 :	100.0		
Total all varieties		:	:	:	:	:	:	:	:	:	:
Independent and		:	:	:	:	:	:	:	:	:	:
voluntary chain...		77.6 :	3.8 :	14.1 :	1.9 :	1.6 :	1.0 :	313 :	100.0		
Chain.....		72.6 :	2.2 :	13.7 :	4.3 :	4.3 :	2.9 :	416 :	100.0		
Total.....		74.8 :	2.9 :	13.8 :	3.3 :	3.2 :	2.0 :	729 :	100.0		

<sup>1/</sup> Includes 48 50-pound crates, 139 50-pound sacks, and 542 100-pound sacks.

<sup>2/</sup> Includes 6 sacks from Mississippi, 3 from north Texas, 2 from Oklahoma, and 1 from Arkansas.

<sup>3/</sup> Includes 12 sacks from North Carolina, 7 from South Carolina, 2 each from Alabama and Virginia, and 1 each from Missouri and Tennessee.



The quality of Bliss Triumphs handled by the independent and voluntary chain stores was shown by analyses to be consistently a little higher than that handled by the corporate chain stores. The opposite was true for the White-Rose variety. It is possible that the quality of this variety averaged lower in the independent and voluntary chain stores because their volume of turnover is less rapid and probably potatoes in some sacks became lightburned or flabby while they were being held in the store before they were displayed for sale.

There was apparently not any great difference in the average quality of new-crop potatoes handled by stores that cater to high- and low-income groups of consumers. Although, as shown in table 14, nearly 86 percent of the packages handled by stores located in rental area A contained potatoes that graded U. S. No. 1 as compared with about 72 percent for the stores in rental area E, this is not regarded as a fair comparison owing to the small number of containers analyzed. If containers of potatoes examined in stores located in rental areas A and B are compared with those found in stores located in rental areas D and E, the percentages that graded U. S. No. 1 are 76.3 and 75.1 respectively. Therefore, a comparison of the quality handled in the stores serving consumers with incomes above average with those below average shows that the difference is not significant.

Table 14. - Quality of early-crop potatoes in original containers <sup>1/</sup> inspected at retail stores in various rental areas in Chicago, January to June 1940

Retail stores in various rental areas in Chicago, January to June 1919									
Rental area	: U.S.No.1:68 to 93:82 to 87:75 to 81:Under 75:							Total	
	:U.S.No.1: except : percent: percent: percent: percent:								
	: : for soft:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:								
	: : rot : : : : :								
	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Percent</u> :	: <u>Number</u> :	: <u>Percent</u>
A	: 85.5 :	: 3.2 :	: 9.7 :	: --- :	: 1.6 :	: --- :	: 62 :	: 100.0	
B	: 73.1 :	: 3.5 :	: 14.1 :	: 3.5 :	: 2.9 :	: 2.9 :	: 171 :	: 100.0	
C	: 73.4 :	: 2.8 :	: 14.4 :	: 3.4 :	: 4.1 :	: 1.9 :	: 319 :	: 100.0	
D	: 75.9 :	: 1.3 :	: 14.1 :	: 4.7 :	: 1.3 :	: 2.7 :	: 149 :	: 100.0	
E	: 71.5 :	: 7.1 :	: 14.3 :	: --- :	: 7.1 :	: --- :	: 28 :	: 100.0	
Total	: 74.8 :	: 2.9 :	: 13.8 :	: 3.3 :	: 3.2 :	: 2.0 :	: 729 :	: 100.0	

<sup>1/</sup> Includes 48 50-pound crates, 139 50-pound sacks, and 542 100-pound sacks.

#### Quality in Display Bins

The average quality of new-crop potatoes offered for sale from display bins in the retail stores was considerably lower than the quality of potatoes received in the original packages. As shown in table 15 only about 48 percent of the bins contained potatoes that met the requirements of U. S. No. 1 grade at the time they were examined, whereas about 75 percent of the original packages contained potatoes that were U. S. No. 1 grade (table 13). The remaining 52 percent of the bin samples contained potatoes ranging from 93 percent to below 25 percent U. S. No. 1 quality. The fact that the average quality of bin samples is considerably lower than the quality of potatoes delivered to the stores in original containers does not mean that consumers who are served from the bins receive comparable quality. Consumers who serve themselves from bins usually select the best potatoes and leave the U. S. No. 2's and culls. Store clerks do not as a rule serve customers with badly defective tubers.

Table 15. - Quality of early-crop potatoes inspected in display bins at retail stores in Chicago,  
January to June 1940

Variety and class of store		: U.S.No.1:88 to 93:82 to 97:75 to 81:50 to 74:25 to 49:Under 25:										Total
		:U.S.No.1: except : percent: percent: percent: percent: percent: percent: percent: percent: percent:										
		:for soft:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:U.S.No.1:										
		: rot	:	:	:	:	:	:	:	:	:	
		:Percent	:Percent	:Percent	:Percent	:Percent	:Percent	:Percent	:Percent	:Percent	:Number	:Percent
		:	:	:	:	:	:	:	:	:	:	:
Bliss Triumph (All States)		:	:	:	:	:	:	:	:	:	:	:
Independent and voluntary chain		74.2	:	11.3	:	5.2	:	6.2	:	3.1	:	97 : 100.0
Chain		33.3	:	43.9	:	12.3	:	3.5	:	3.5	:	57 : 100.0
Total		59.1	:	23.4	:	7.8	:	5.2	:	3.2	:	154 : 100.0
White Rose (California)		:	:	:	:	:	:	:	:	:	:	:
Independent and voluntary chain		41.9	:	16.1	:	15.1	:	4.3	:	8.6	:	93 : 100.0
Chain		33.0	:	13.2	:	16.0	:	9.4	:	12.3	:	106 : 100.0
Total		37.2	:	14.6	:	15.6	:	7.0	:	10.6	:	199 : 100.0
Cobler (All States):		:	:	:	:	:	:	:	:	:	:	:
Independent and voluntary chain		85.7	:	---	:	14.3	:	---	:	---	:	7 : 100.0
Chain		100.0	:	---	:	---	:	---	:	---	:	1 : 100.0
Total		87.5	:	---	:	12.5	:	---	:	---	:	8 : 100.0
Total all varieties		:	:	:	:	:	:	:	:	:	:	:
Independent and voluntary chain		59.4	:	13.2	:	10.1	:	5.1	:	5.6	:	197 : 100.0
Chain		33.5	:	23.8	:	14.6	:	7.3	:	9.1	:	164 : 100.0
Total		47.6	:	18.0	:	12.2	:	6.1	:	7.2	:	361 : 100.0



Therefore, the average quality of potatoes taken by consumers is probably somewhere near the average quality of the potatoes received at the stores in the original packages from which the bins are filled. Most of the difference in average quality of potatoes received at the stores in original containers and the average quality of bin samples simply represents an accumulation of defective tubers (U. S. No. 2's and culls). Such defective potatoes are those that have deteriorated or were damaged in transit and in handling, or were overlooked by the sorters in the grading and packing operations for which a small tolerance is provided under requirements of United States standards.

The average quality of bin samples taken in corporate chain stores was noticeably lower than the average quality of those taken in independent and voluntary chain stores. No doubt one reason for this was that customers in chain stores were allowed to serve themselves more frequently than in independent and voluntary chain stores, thus accounting for a greater accumulation of defective tubers in the bins. Also the fact that the average chain store turnover is greater than for voluntary or independent stores may account in some measure for a greater accumulation of defective stock in the chain stores. Another reason for the lower quality of the White Rose taken from display bins in chain stores may have been that larger displays were usually maintained and a larger portion of tubers became damaged by lightburn.

A comparison of the quality of bin samples by varieties shows that the quality of White Rose averaged considerably lower than for the Bliss Triumph variety. This was largely the result of damage by lightburn to potatoes of the White Rose variety.

#### Damage by Lightburn to California White Rose Potatoes

As has been previously shown, the retailers' chief objection to California White Rose potatoes was their susceptibility to lightburn. The seriousness of this defect is shown in table 16.

Out of 205 original packages of this variety examined in the stores, about 91 percent contained potatoes that were free from damage by this defect. The remaining 9 percent of the packages showed that from less than 1 percent to more than 50 percent of the potatoes in the packages had been damaged by lightburn. Such damage no doubt occurred while the sacks were kept exposed to light either in the stores or before their arrival at the stores.

Comparison of the amount of damage by lightburn to potatoes in original packages with such damage to those in bins shows that most of it occurred in the display bins. Only about 44 percent of the 199 bin samples analyzed had potatoes free from damage by lightburn. The remaining 56 percent of the bins contained from less than 1 percent to more than 75 percent of the potatoes damaged by exposure to light.

The percentage of tubers damaged by lightburn was somewhat greater in display bins of the chain stores than in those of independent and voluntary chain stores probably because on the average larger displays were maintained in chain stores, and because more consumers served themselves in chain stores than in independent and voluntary chain stores. Naturally consumers under such circumstances avoid selecting potatoes that are beginning to turn green from exposure to light.



Table 16. - Damage by Lightburn 1/ to California White Rose potatoes inspected in original packages and in display bins at retail stores, Chicago, April to June 1940

Class of store	: Less than: Over 1 : Over 5 : Over 10: Over 25: Over 50: Over:									
	: None: 1 to 1 : to 5 : to 10 : to 25 : to 50 : to 75 : 75 : Total									
	: : percent : percent: percent: percent: percent: percent: per- : cent:									
	Pct.:	Pct.:	Pct.:	Pct.:	Pct.:	Pct.:	Pct.:	Pct.:	No.:	Pct.
Original packages										
Independent and voluntary chain..	94.8:	1.3	---	1.3	---	1.3	1.3	1.3	---	75:100.0
Chain.....	88.5:	3.1	3.9	1.5	1.5	1.5	1.5	---	---	130:100.0
Total.....	90.7:	2.4	2.4	1.5	1.0	1.5	.5	---	---	205:100.0
Display bins										
Independent and voluntary chain..	48.4:	1.1	12.9	10.7	14.0	4.3	1.1	7.5	93:100.0	
Chain.....	79.6:	---	7.6	15.1	19.8	9.4	4.7	3.8	106:100.0	
Total.....	43.7:	.5	10.1	13.1	17.1	7.0	3.0	5.5	199:100.0	

1/ Only lightburn sufficient to disqualify the individual tuber from the U. S. No. 1 grade was scored in the analyses.

The amount of lightburn damage to the White Rose variety certainly shows that retailers need to exercise more care in keeping excess supplies of this variety from exposure to light. No doubt the maintenance of smaller displays would aid in diminishing this type of damage. Shippers could also aid in the control of lightburn by withholding shipments until they had become more mature than many lots were the past season.

### Cleanness of Potatoes

It appears to be the accepted practice in most of the important producing areas to wash new potatoes, as evidenced by the appearance of the potatoes inspected in retail stores in Chicago. Even slightly dirty stock was distinctly the exception in the Bliss Triumph and White Rose varieties. Analyses of the White Rose potatoes in original containers showed that all the potatoes were clean, while 83 percent of the packages of Bliss Triumphs contained clean potatoes and 14 percent contained stock that was classified as fairly clean, or fairly clean to clean (table 17).

Table 17. - Cleanness of early-crop potatoes inspected in original packages at retail stores in Chicago, January to June 1940.

Variety and class of store	Clean		Fairly clean to clean		Fairly clean to slightly dirty		Total	Number	Percent
	Percent	Percent	Percent	Percent	Percent	Percent			
Bliss Triumph									
Independent and									
voluntary chain...	89.9	8.8	0.4	0.9	---	---	227	100.0	
Chain.....	78.0	14.3	4.4	1.8	1.5	---	272	100.0	
Total.....	83.4	11.8	2.6	1.4	.8	---	499	100.0	
White Rose									
Independent and									
voluntary chain...	100.0	---	---	---	---	---	75	100.0	
Chain.....	100.0	---	---	---	---	---	130	100.0	
Total.....	100.0	---	---	---	---	---	205	100.0	
Cobbler									
Independent and									
voluntary chain...	45.4	27.3	---	9.1	18.2	---	11	100.0	
Chain.....	7.1	78.6	---	14.3	---	---	14	100.0	
Total.....	24.0	56.0	---	12.0	8.0	---	25	100.0	
Total all varieties	86.0	10.0	1.8	1.4	.8	---	729	100.0	

In a previous study of cleanness of late-crop potatoes, the Cobbler variety presented the poorest appearance. This was also true of the early crop, as analyses showed that only 24 percent of the original packages examined contained potatoes that could be classified as clean. An additional 56 percent, however, contained stock that was fairly clean, which usually would not be especially detrimental to appearance. Because very few shipments of Cobblers arrived on the Chicago market during the period of the study, the cleanness of the potatoes analyzed in the packages of this variety probably cannot be considered as representative of the total new crop.



The cleanness of samples from 361 display bins is shown in table 18. As was true of White Rose potatoes in the original packages, bin samples of this variety were all classed as clean. Bliss Triumphs showed only slight variation from the percentages shown for various degrees of cleanness in original packages. Cobblers showed a much higher percentage of clean stock in bins than in sacks but because of the very small number of samples analyzed this cannot be regarded as significant.

Table 18. - Cleanness of early-crop potatoes inspected in display bins at retail stores in Chicago, February to June 1940

Variety and class of store	Clean	Fairly clean	Fairly clean to clean	Fairly clean to slightly dirty	Slightly dirty	Total
	Percent	Percent	Percent	Percent	Percent	Number : Percent
Bliss Triumph						
Independent and voluntary chain...	85.6	10.8	1.8	0.9	0.9	111 : 100.0
Chain.....	72.1	13.9	7.0	7.0	---	43 : 100.0
Total.....	81.8	11.7	3.2	2.6	.7	154 : 100.0
White Rose						
Independent and voluntary chain...	1/100.0	---	---	---	---	93 : 100.0
Chain.....	2/100.0	---	---	---	---	106 : 100.0
Total.....	100.0	---	---	---	---	199 : 100.0
Cobbler						
Independent and voluntary chain...	57.1	42.9	---	---	---	7 : 100.0
Chain.....	---	100.0	---	---	---	1 : 100.0
Total.....	50.0	50.0	---	---	---	8 : 100.0
Total all varieties	91.1	6.1	1.4	1.1	.3	361 : 100.0

1/ Includes one sample which showed "few" potatoes smeared from soft rot, otherwise clean.

2/ Includes six samples which showed "few to many" potatoes smeared from soft rot, otherwise clean.

#### Soft Rot or Wet Breakdown in Retail Store Receipts

Although soft rot or wet breakdown was designated by a majority of retailers who were interviewed as the second most serious defect of early-crop potatoes, this defect caused relatively small actual losses. As shown in table 19, 68 percent of the 729 original packages of all varieties examined contained no potatoes affected with soft rot or wet breakdown, while an additional 22 percent of the packages contained not to exceed 1 percent.

Many retailers commented on the exceptionally good deliveries this season as compared with other years. The generally good condition of early-crop stock was in most cases attributed to the uncommonly cool weather which prevailed during the shipping season.

It appears logical that the percentage of original packages containing tubers affected with soft rot or wet breakdown was considerably higher than was the case for samples from display bins, owing to the practice of removing badly decayed potatoes from the stock when bins were filled.

Table 19. - Percentage of soft rot or wet breakdown in original packages and display bins of early-crop potatoes inspected at retail stores in Chicago, January to June 1940

	:	:	Less	Over 1	Over 2	Over 3	Over	:								
Variety and type	:	None	:	than	:	to 2	:	to 3	:	to 5	:	5	:	Total		
of package	:	:	:	1 to 1	:	percent	:	percent	:	percent	:	percent	:			
	:	:	:	percent	:	:	:	:	:	:	:	:	:			
	:	Percent	:	Percent	:	Percent	:	Percent	:	Percent	:	Percent	:	Number	:	Percent
Original packages	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Bliss Triumph	:	69.9	:	21.1	:	6.2	:	1.2	:	1.2	:	0.4	:	499	:	100.0
White Rose	:	64.8	:	22.4	:	8.3	:	1.5	:	1.5	:	1.5	:	205	:	100.0
Cobbler	:	48.0	:	44.0	:	4.0	:	4.0	:	---	:	---	:	25	:	100.0
Total	:	67.8	:	22.2	:	6.7	:	1.4	:	1.2	:	.7	:	729	:	100.0
Bin samples	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Bliss Triumph	:	82.5	:	12.3	:	2.6	:	0.7	:	1.9	:	---	:	154	:	100.0
White Rose	:	84.4	:	6.1	:	5.0	:	1.5	:	1.5	:	1.5	:	199	:	100.0
Cobbler	:	62.5	:	37.5	:	---	:	---	:	---	:	---	:	8	:	100.0
Total	:	83.1	:	9.4	:	3.9	:	1.1	:	1.7	:	.8	:	361	:	100.0

#### Size of Early-Crop Potatoes Offered for Sale

Consumers as a rule are less prone to object to small-sized early-crop potatoes than they are to small-sized late-crop stock. Retailers and consumers in Chicago were reasonably well satisfied with the size of new-crop potatoes the past season. A small percentage of retailers, however, complained that some lots contained an excessive number of small potatoes and they had some difficulty in disposing of such lots. They considered lots unsatisfactory if they contained a high percentage of tubers ranging from about 1-7/8 inches to 2 or 2-1/8 inches in diameter.

In order to obtain a representative picture of the size of early-crop potatoes offered to consumers the past season, potatoes in original packages and in bins were separated into four different size classifications, namely, (1) those under 1-7/8 inches in diameter, (2) those 1-7/8 inches to 2 1/4 inches in diameter in the case of round varieties and those 1-7/8 inches in diameter to 6 ounces in weight in the case of the White Rose variety, (3) those 2 1/4 to 3 inches in diameter in the case of round varieties and those 6 to 10 ounces in weight in the case of the White Rose, and (4) those more than 3 inches in diameter in the case of round varieties and those over 10 ounces in weight in the case of the White Rose variety.

In the first classification the size 1-7/8 inches was selected as the maximum because this is the minimum size specified in U. S. No. 1 grade and potatoes are generally sized for market to this minimum. Two and one-fourth inches for round varieties and 6 ounces for the White Rose variety were used primarily because a lot of round potatoes in order to meet requirements of size A according to United States standards must have at least 60 percent 2 1/4 inches or larger in diameter and a lot of long potatoes must have at least 40 percent 6 ounces or more in weight. The classifications 2 1/4 to 3 inches for round varieties and 6 to 10 ounces for long varieties were used since potatoes within this range are generally considered as of medium size. Over 3 inches in diameter for round varieties and over 10 ounces in weight for long varieties were used as the minimum for the fourth classification as potatoes above these sizes are usually considered as large.



An analysis of the lots inspected with reference to meeting size A requirements is interesting because it definitely separates the lots in which the majority of the potatoes are small from those that usually contain a range of size from small to large but with enough medium- and large-sized tubers to give the lot a fairly good appearance. It was observed that lots of new potatoes that met the minimum requirements of size A were generally satisfactory to retailers and consumers although this is not always true of late-crop stock. Since so few retailers complained of the small size of new potatoes apparently many lots that did not meet the requirements of size A were also reasonably satisfactory.

The percentage of packages and also samples of potatoes from bins that met requirements for size A classification is shown by varieties in table 20. Out of 724 original packages analyzed, 53 percent met requirements for size A. The White Rose, having the highest percentages meeting such requirements, was followed in order by Cobblers and Bliss Triumphs.

Table 20. - Percentages of original packages and samples from display bins of early-crop potatoes inspected at retail stores in Chicago that met requirements of size A, January to June 1940

Variety	Potatoes in original packages				Potatoes in display bin samples			
	Size A		Not size A		Size A		Not size A	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Bliss Triumph	224	44.9	275	55.1	60	39.0	94	61.0
White Rose	145	70.7	60	29.3	105	52.8	94	47.2
Cobbler	17	68.0	8	32.0	3	37.5	5	62.5
Total	386	53.0	343	47.0	168	46.5	193	53.5

A slightly smaller percentage of bin samples met requirements of size A. This would be expected since in some stores consumers were allowed to serve themselves and the natural tendency was to select the larger tubers.

A clearer picture of the sizes of new-crop potatoes supplied to retail stores the past season is presented by giving the average size of potatoes examined in original containers. These results are summarized in table 21 by varieties and by States of origin. On the average, California Bliss Triumphs ran larger than those of the same variety from other States, whereas there was no appreciable difference in the average size from other producing States. The average size of 25 samples of Cobblers was slightly larger than the average size of all Bliss Triumphs. Considering the average size for both Bliss Triumphs and Cobblers from all producing sections, about 42 percent would be classed as small, 55 percent as medium size, and 3 percent as large. Although it is noted that on the average nearly half of the White Rose potatoes were 6 ounces or smaller in size, there were relatively few consumer complaints on the size of this variety.

Table 21. - Average size of early-crop potatoes inspected in original containers at retail stores in Chicago, January to June 1940

Variety and State		:Number :	Under : 1-7/8 :	Over 2 1/4 :	Over 3 :	of con-: 1-7/8 :	to 2 1/4 :	to 3 :	inches :	Total
		:tainers:	inches:	inches:	inches:	:	:	:	:	:
		:	Percent:	Percent:	Percent:	Percent:	Percent:	Percent:	Percent:	Percent:
Bliss Triumph		:	:	:	:	:	:	:	:	:
Florida		:	48 :	1.6 :	37.0 :	54.4 :	7.0 :	100.0		
Texas		:	105 :	1.2 :	38.8 :	56.8 :	3.2 :	100.0		
Alabama		:	173 :	1.7 :	46.9 :	50.3 :	1.1 :	100.0		
Louisiana		:	107 :	1.0 :	42.3 :	55.1 :	1.6 :	100.0		
California		:	54 :	.5 :	28.1 :	66.6 :	4.8 :	100.0		
Other States		:	12 :	.8 :	42.8 :	54.4 :	2.0 :	100.0		
Total		:	499 :	1.3 :	41.1 :	54.9 :	2.7 :	100.0		
Cobbler		:	25 :	1.0 :	31.1 :	60.7 :	7.2 :	100.0		
Total Bliss Triumph		:	:	:	:	:	:	:		
and Cobbler		:	524 :	1.3 :	40.6 :	55.2 :	2.9 :	100.0		
		:	:	Under : 1-7/8 :	Over 6 :	Over 10 :				
		:	:	1-7/8 :	inches: to 10 :	ounces:				
		:	:	inches: to 6 :	ounces:	:				
		:	:	ounces:	:	:				
		:	:	Percent:	Percent:	Percent:	Percent:	Percent:	Percent:	
White Rose:	California	:	205 :	.7 :	47.9 :	44.1 :	7.3 :	100.0		

## SUMMARY

From May to June 1940, 505 retailers (305 independent and voluntary chain, and 200 chain-store managers) in Chicago were interviewed concerning trade practices, preferences, and objections to some qualities in early-crop potatoes, for the purpose of obtaining information that might prove beneficial to the potato industry in helping to bring about improvement in the quality of potatoes offered for sale to consumers and general improvement in marketing methods. From January to June 1940, the quality and size of early-crop potatoes found in retail stores, both in original containers and in display bins, were determined on the basis of United States standards.

Chain-store organizations supply their stores largely with potatoes purchased in carlots through their own organizations or through subsidiary or other corporations. Voluntary chain stores, most of which buy potatoes independently, and independent retailers get most of their supplies through Chicago carlot receivers. About 53 percent of the retail managers of the two latter classes reported that they ordered their supplies by telephone through wholesalers in whom they placed confidence. Most of the remainder said they or one of their representatives habitually or frequently inspected their potato purchases at one of the wholesale markets, while some reported they bought directly from trucking jobbers or peddlers.

About 10 percent of the independent and voluntary chain-store managers who were interviewed stated that they made it a general practice to check the weights of new-crop potatoes upon receipt at the store, 5 percent said they occasionally checked weights, and the remainder stated they accepted wholesalers' weights as billed.



Statements of chain-store managers regarding weights at which potatoes were billed to their stores showed 48 to 50 pounds predominating in the case of 50-pound crates and sacks and 98 pounds outstandingly predominating in the case of 100-pound sacks.

Results of interviews showed that about three-fourths of the stores in Chicago sell not to exceed 1,000 pounds of early-crop potatoes per week, and that slightly more than 50 percent of these handle from 100 to 500 pounds and the remainder from 600 to 1,000 pounds. Only an occasional retailer was found who stocked consumer packages of new potatoes.

Approximately 90 percent of all retailers who were interviewed stated that the principal method of serving customers with early-crop potatoes was by preparing the order in the presence of the customer.

The most common sizes of purchase in more than three-fourths of all stores visited were in units not over  $7\frac{1}{2}$  pounds, and very few purchases were found to be in units over 15 pounds. Independent and voluntary chain-store managers reported an average unit of sale slightly smaller than corporate chain-store managers. Stores reporting smallest consumer purchase units were located in the lowest-income areas.

A great majority of retail stores of all classes do not discount any of their receipts of new potatoes, because of undesirable sizes or accumulations of defective potatoes. Only about 9 percent of the store managers who were interviewed stated that they made a practice of selling stock of undesirable size and off-quality stock of all varieties at a discount and the same percentage specified White Rose as the only variety discounted. Practically all retailers who reported discounting off-quality White Rose stock reported that such discounts were made chiefly because of lightburn.

Nearly 85 percent of all retailers who were interviewed estimated their losses from potatoes that became unsaleable because of decay and other serious defects at not more than 2 percent. A number of retailers, however, reported that rather high percentages of the White Rose variety had to be discarded because lightburn had occurred in the store displays.

Nearly all the retailers expressed a decided preference for the Bliss Triumph, while a majority named White Rose as second choice. A few store managers, mostly located in the low-income areas, preferred Cobblers. The majority of retailers expressed no State preferences for their potato supplies.

Defects of early-crop potatoes were far less serious to the retailers and consumers than defects of late-crop stock. About half of all retailers who were interviewed did not regard any defects of round varieties of new potatoes as serious, while 15 percent found no fault with White Rose. Soft rot was rated as the most serious defect of round varieties by the remaining retailers although most of them reported very little trouble with this defect except in occasional lots. Lightburn, most of which occurred while potatoes were on display, and discoloration, were rated as the only serious defects of California White Rose potatoes. These defects were most prevalent during the early part of the shipping season.

Retailers reported that consumers object considerably less to small-sized potatoes in early-crop stock than was the case with late-crop receipts. Over three-fourths of the store managers indicated the most desirable size range for round varieties of new-crop potatoes as being 2 to 3 inches in diameter, while a majority specified that the White Rose variety should preferably be within a range of from 4 to 14 ounces in weight.

A very large percentage of all retailers who were interviewed expressed preference for washed stock in early-crop potatoes, while less than one-fifth indicated reasonably clean but unwashed potatoes as the most desirable. A majority of the independent and voluntary chain-store managers who indicated a preference for unwashed stock were located in the lower-income areas.

A majority of retailers in Chicago were reasonably well satisfied with the quality and size of new potatoes that they handled the past season. Only 171 out of 505 store managers had any suggestions to offer for improvement; the most important one, directed to California shippers, was that they find a way of delivering more mature White Rose potatoes that would be less susceptible to lightburn. The suggestion next frequently made was for the general adoption of 50-pound size sacks for shipment of new-crop stock. Some retailers limited this suggestion to White Rose shipments.

In order to secure as representative a picture as possible of the early-crop potatoes offered to consumers in Chicago, the potatoes in 729 original packages and 361 samples from display bins were analyzed for quality and size on the basis of United States standards.

About 75 percent of the original packages contained potatoes that met requirements of U. S. No. 1 and another 14 percent contained potatoes that were from 88 to 93 percent U. S. No. 1 quality. The average quality of Bliss Triumphs from Texas, which exceeded the quality of this variety from any other State, was found to be about the same as the quality of White Rose from California. Quality of new potatoes in stores catering to consumers with below-average incomes were found to be about as good as the quality in stores selling to consumers with above average incomes.

Quality of potatoes analyzed in display bins averaged considerably lower than the quality of those analyzed in original packages. Not quite half of the bin samples examined graded as U. S. No. 1. Average quality of bin samples taken in chain stores was noticeably lower than for those examined in independent and voluntary chain stores, probably because of more frequent self service, greater turnover, and larger displays which accounted for a more rapid accumulation of badly defective stock in the bins. Quality of White Rose in bin samples average considerably lower than the quality of Bliss Triumphs, largely because of damage by lightburn to the White Rose variety. Out of 199 bin samples of White Rose, 56 percent showed that from less than 1 to more than 75 percent of the potatoes were damaged by exposure to light.

Dirty stock is not a serious problem in new potatoes because of the almost universal practice of washing in most of the important shipping districts. All the White Rose potatoes and 83 percent of the Bliss Triumphs that were examined in original packages were classed as clean. Only about a fourth of the packages of Cobblers contained clean potatoes but more than half of the packages were filled with tubers that were classed as fairly clean.



Although soft rot or wet breakdown was rated as the second most serious defect of early-crop potatoes it caused relatively small losses. Sixty-eight percent of all the original packages examined contained no potatoes affected with these defects and 22 percent contained not more than 1 percent of the tubers so affected.

Retailers and consumers in Chicago were reasonably well satisfied with the sizes of early-crop potatoes handled during the past season, although a few complained about lots that contained a high percentage of tubers from about 1-7/8 to 2 or 2-1/8 inches in diameter. More than half of the original packages that were examined contained potatoes that met size A requirements in accordance with United States standards. Considering the potatoes in all packages of round varieties, about 42 percent were classed as small, 50 percent as medium, and 3 percent as large. Slightly more than half of the White Rose potatoes were above 6 ounces in weight.

APPENDIX TABLES

Table 22. - Varietal preference for early-crop potatoes as expressed by 305 independent and voluntary chain-store managers in Chicago, April to June 1940

Variety	Rental area A			Rental area B			Rental area C		
	First	Second	Third	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	100.0	---	---	100.0	---	---	99.0	1.7	---
White Rose	---	100.0	---	---	1/98.0	50.0	1.0	2/94.9	---
Cobbler	---	---	---	---	2.0	50.0	---	3.4	100.0
Total	100.0	100.0	---	100.0	100.0	100.0	100.0	100.0	100.0
	Rental area D			Rental area E			Total all areas		
	First	Second	Third	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	96.2	6.0	---	84.5	27.3	---	95.7	6.5	---
White Rose	3.8	3/94.0	---	1.7	4/69.7	100.0	1.7	91.5	40.0
Cobbler	---	---	100.0	13.8	3.0	---	2.6	2.0	60.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 5 percent of the retailers.

2/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 2 percent of the retailers.

3/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 10 percent of the retailers.

4/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 3 percent of the retailers.

Table 23. - Varietal preference for early-crop potatoes as expressed by 200 chain-store managers in Chicago, April to June 1940

Variety	Rental area A			Rental area B			Rental area C		
	First	Second	Third	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	78.6	23.1	---	92.7	8.3	---	95.3	5.1	---
White Rose	21.4	76.9	---	7.3	1/91.7	---	4.7	2/94.9	---
Cobbler	---	---	---	---	---	100.0	---	---	100.0
Total	100.0	100.0	---	100.0	100.0	100.0	100.0	100.0	100.0
	Rental area D			Rental area E			Total all areas		
	First	Second	Third	First	Second	Third	First	Second	Third
	choice	choice	choice	choice	choice	choice	choice	choice	choice
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
Bliss Triumph	91.4	9.7	---	80.0	20.0	---	92.0	8.8	---
White Rose	8.6	3/83.9	50.0	20.0	80.0	---	8.0	90.1	14.8
Cobbler	---	6.4	50.0	---	---	---	---	1.1	85.1
Total	100.0	100.0	100.0	100.0	100.0	---	100.0	100.0	100.0

1/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 4 percent of the retailers.

2/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 8 percent of the retailers.

3/ Although here noted as second choice White Rose was rated even with Bliss Triumph by 13 percent of the retailers.



Table 24. - Size range of round varieties early-crop potatoes, (practically all Bliss Triumph), most desirable as reported by 505 retailers located in various rental areas in Chicago, April to June 1940

Size range in inches	Independent retailers					Chain-store managers					Voluntary chain-store managers					Total
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	No. : Pct.
1½ to 2	13.6	4.8	2.7	12.2	13.5	---	---	---	11.7	10.0	---	7.7	---	---	---	29 : 5.7
1-7/8 to 3	---	---	---	1.4	7.7	---	---	---	---	---	---	---	---	20.0	---	6 : 1.2
2 to 2-3/4	---	---	---	---	1.9	---	3.6	1.2	2.8	10.0	---	---	---	---	16.7	7 : 1.4
2 to 3	63.7	73.8	78.4	73.0	55.8	92.9	85.5	81.3	74.3	80.0	100.0	69.2	77.8	80.0	83.3	383 : 75.8
2 to 3¼	---	14.3	2.7	6.7	3.8	---	3.6	8.2	2.8	---	---	15.4	---	---	---	27 : 5.4
2 to 3½	---	---	1.3	---	5.8	---	---	2.3	2.8	---	---	---	---	---	---	7 : 1.4
2½ to 3	22.7	4.8	12.2	6.7	7.7	7.1	7.3	5.8	2.8	---	---	7.7	22.2	---	---	39 : 7.7
2½ to 3¼	---	2.3	2.7	---	3.8	---	---	---	---	---	---	---	---	---	---	5 : 1.0
2½ to 3½	---	---	---	---	---	---	---	1.2	2.8	---	---	---	---	---	---	2 : .4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	505 : 100.0

Table 25. - Size range of early-crop White Rose potatoes most desirable as reported by 360 retailers 1/ located in various rental areas, Chicago, April to June 1940

Size range in ounces	Independent retailers					Chain-store managers					Voluntary chain-store managers					Total	
	Rental area					Rental area					Rental area						
	A	B	C	D	E	A	B	C	D	E	A	B	C	D	E	No.	Pct.
	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.	Pct.		
3 to 10	---	---	---	---	---	---	---	---	---	14.3	---	---	---	50.0	---	2	0.6
3 to 12	---	---	---	3.9	---	---	---	1.3	---	---	---	---	---	---	---	3	.8
4 to 10	7.7	6.9	6.0	11.7	16.6	15.4	17.4	6.4	6.7	14.3	50.0	---	---	---	33.3	36	10.0
4 to 12	53.8	48.3	28.0	35.3	38.9	38.4	43.5	37.2	50.0	71.4	50.0	50.0	33.3	---	33.3	144	40.0
4 to 14	7.7	17.3	28.0	13.7	11.1	15.4	8.7	24.4	6.7	---	---	40.0	66.7	50.0	---	65	18.1
4 to 16	---	3.4	8.0	21.6	5.6	---	---	15.4	---	---	---	---	---	---	---	29	8.0
5 to 10	23.1	3.4	8.0	2.0	16.6	23.1	4.3	2.5	3.3	---	---	10.0	---	---	33.4	22	6.1
5 to 12	---	13.8	14.0	5.9	---	---	17.4	9.0	23.3	---	---	---	---	---	---	36	10.0
5 to 14	---	---	2.0	3.9	5.6	---	4.3	2.5	3.3	---	---	---	---	---	---	9	2.5
6 to 10	---	6.9	2.0	2.0	---	---	2.2	---	---	---	---	---	---	---	---	5	1.4
6 to 12	7.7	---	2.0	---	5.6	---	2.2	---	6.7	---	---	---	---	---	---	6	1.7
6 to 14	---	---	2.0	---	---	7.7	---	1.3	---	---	---	---	---	---	---	3	.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	360	100.0

1/ A total of 505 retailers were interviewed. Of this number 8 did not reply to the question and 137 stated they were not handling White Rose potatoes.





